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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/761,033 | 01/16/2001 | Yang Gao | 10508/998RSS366 | 4236 |

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| EXAMINER |
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JACKSON, JAKIEDA R

| ART UNIT | PAPER NUMBER |
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2655

DATE MAILED: 02/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/761,033

Applicant(s)

GAO, YANG

Examiner

Jakieda R Jackson

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Specification

1. The Specification is objected to because of the following informalities:

➤ In the Abstract, line 7, the word "is" should be deleted.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. **Claim 11** is rejected under 35 U.S.C. 112, first paragraph, as a single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, is subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. In re Hyatt, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983) (A single means claim which covered every conceivable means for achieving the stated purpose was held nonenabling for the scope of the claim because the specification disclosed at most only those means known to the inventor.). When claims depend on a recited property, a fact situation comparable to Hyatt is possible, where the claim covers every conceivable structure (means) for achieving the stated property (result) while the specification discloses at most only those known to the inventor.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. **Claims 1-27** are rejected under 35 U.S.C. 102(b) as being anticipated by Aoyagi et al., hereinafter referenced as Aoyagi.

Regarding **claim 1**, Aoyagi discloses a communications system comprising:

an encoder to encode a digitized speech signal (coder; column 1, lines 43-45 and column 3, lines 49-51);

a communication link (wireless or wireline transmission) communicatively coupled to the encoder (column 16, lines 1-6);

a decoder communicatively coupled to the encoder (column 7, line 66 – column 8, line 5) via the communication link (wireless or wireline transmission; column 16, lines 1-6); and

a short term excitation enhancement circuit (figure 1, element 40) in communication with the encoder and the decoder (column 3, lines 60-66 and column 7, line 66 – column 8, line 5).

Regarding **claim 2**, Aoyagi discloses the system where the decoder includes the short term excitation enhancement circuit (column 7, line 66 – column 8, line 5).

Regarding **claims 3 and 11**, Aoyagi discloses the system where the short term excitation enhancement circuit (40) operates to improve the perceptual quality of speech data for reproduction (column 8, lines 45-54).

Regarding **claims 4 and 16**, Aoyagi discloses the system where the system employs eXtended code-excited linear prediction (inherent in forward and backward linear predictive coding; column 15, lines 30-37).

Regarding **claims 5 and 17**, Aoyagi discloses the system where the system employs code-excited linear prediction (CELP coder and decoder).

Regarding **claim 6**, Aoyagi discloses the system where the short term excitation enhancement circuit is distributed between the encoder and the decoder (column 3, lines 60-66 and column 7, line 66 – column 8, line 5).

Regarding **claims 7 and 12**, Aoyagi discloses the system according to claim 1 where the short term excitation enhancement circuit places at least one pulse, in addition to at least one current excitation pulse (distance between speech signal), within a speech sub-frame (column 6, lines 21-31).

Regarding **claims 8 and 13**, Aoyagi discloses the system where the short term excitation enhancement circuit uses a weighted excitation pulse (excitation signal) to estimate a location (perceptual distance calculator; figure 1, element 115) of a correlation peak within the speech sub-frame (column 5, lines 28-56).

Regarding **claims 9 and 14**, Aoyagi discloses the system where the short term excitation enhancement circuit uses the estimated location of the correlation peak to place the at least one pulse (column 5, lines 28-56).

Regarding **claims 10 and 15**, Aoyagi discloses the system according to claim 1 where the short term excitation enhancement circuit performs short term excitation within a pitch lag (column 6, lines 65-67).

Regarding **claim 18**, Aoyagi discloses the system where the short term excitation enhancement circuit (figure 1, element 40) is included on a decoder of the communication system (column 7, line 66 – column 8, line 5).

Regarding **claim 19**, Aoyagi discloses a method to perform excitation enhancement on speech data, the method comprising:

analyzing a coded signal (analysis and quantization circuit; figure 1, element 30; column 4, lines 2-15); and

performing short term excitation enhancement in accordance with the analyzed coded signal (column 6, line 65 – column 7, line 6).

Regarding **claim 20**, Aoyagi discloses the method where the analyzed coded signal includes a past weighted excitation signal (column 5, lines 33-41).

Regarding **claim 21**, Aoyagi discloses the method where analyzing the coded signal further includes estimating a location of a correlation function within a current sub-frame (column 6, lines 22-31).

Regarding **claim 22**, Aoyagi discloses the method where estimating the location of the correlation function (perceptual distance calculator; figure 1, element 115) is based on a past weighted excitation signal (excitation signal; column 5, lines 28-56).

Regarding **claim 23**, Aoyagi discloses the method further comprising adding a pulse, in addition to at least one current excitation pulse, to a current sub-frame

(distance between speech signal) to produced an enhanced excitation signal (column 6, lines 21-31).

Regarding **claim 24**, Aoyagi discloses the method further comprising using the enhanced excitation signal during the reconstruction (converting) of the original speech signal (column 2, lines 36-47).

Regarding **claim 25**, Aoyagi discloses the method further comprising transmitting the weighted excitation signal from an encoder to a decoder via a communication link (column 7, line 66 – column 8, lines 5).

Regarding **claim 26**, Aoyagi discloses the method further comprising performing code-excited linear prediction to generate the coded signal (column 5, line 65 – column 6, line 3).

Regarding **claim 27**, Aoyagi discloses the method further comprising performing eXtended code-excited linear prediction (inherent in forward and backward linear predictive coding; column 15, lines 30-37), to generate the coded signal.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

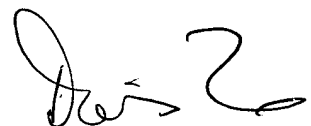
- U.S. Patent No. 6,311,154 to Gersho et al. discloses adaptive windows for analysis-by-synthesis CELP-type speech coding.
- U.S. Patent No. 5,924,061 to Shoham discloses efficient decomposition in noise and periodic signal waveforms in waveform interpolation.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 703.305.5593. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Talivaldis I. Smits can be reached on 703. 306-3011. The fax phone number for the organization where this application or proceeding is assigned is 703.872.9314.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.305.4700.

JRJ
January 22, 2004


1/26/04
DORIS H. TO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600